

REMARKS

Summary of the Amendment

Upon entry of the above amendment, Claims 1, 3-6 and 8-9 will have been amended. Additionally, new Claims 10-11 will have been added. Accordingly, Claims 1-11 remain currently pending.

Summary of the Official Action

In the instant Office Action, the Examiner has rejected claims 1-9 over the art of record. In consideration of the included amendment and remarks, Applicant submits that the rejections have been overcome, and respectfully requests reconsideration of the outstanding Office Action and allowance of the present application.

Traversal of Rejection Under 35 U.S.C. § 103(a)

Welch in view of Rostoker:

Applicant traverses the rejection of Claims 1, 3-6 and 8-9 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,903,373 to Welch [hereinafter "WELCH"] in view of U.S. Patent No. 5,729,535 to Rostoker et al. [hereinafter "ROSTOKER"].

WELCH teaches a method and apparatus for locating a portable remote station 14 transceiving a diffuse infrared communicated signal 13, 15 within an enclosed area containing a plurality of stationary infrared transceivers 16a interconnected 18 with a central controller 12. The method includes the steps of detecting a particular transmission of the diffuse infrared communicated signal 13, 15 from the portable remote station 14 within the enclosed area 11 by the plurality of stationary receivers 16 and measuring a parametric value of the particular signal received by each stationary transceivers 16a. The method further includes the step of locating the portable remote station 14 based upon differences in the parametric value measured at each stationary transceivers 16a.

ROSTOKER discloses a computer capable of transmitting and receiving video and audio signals over an RF bandwidth. The RF bandwidth is allocated among the audio and the video signals to allow the audio and video signals to be fitted within the RF bandwidth. The allocation is performed by varying rates of compression of the audio and video signals. The video is displayed by using fast digital-to-analog converters. An existing computer can be configured for wireless communications by inserting into its backplate a board including a transceiver for transmitting and receiving compressed audio and video signals. The computer's microprocessor is programmed to perform the bandwidth allocation, and can even be programmed to compress and decompress the audio and video signals.

With regard to Claims 1, 3-6 and 8-9 the Examiner submits that WELCH:

“discloses a system (102, fig. 9) for operatively interconnecting modules within a computer system (col 1, lines 32-34 to enable data to be transmitted and received therebetween (col. 11, lines 32-34) to enable data to be transmitted and received therebetween (col. 11, lines 21-32), comprising: a first module having a first media access control logic circuit (112, fig. 9) formed thereon for transmitting and receiving data (data processor 112 communicate bi-directionally with remote controller 110) substantially conforming to a standardized infrared communications scheme protocol (note that data processor 112 and remote controller 110 are communicating with infrared transmitter 116 and receiver 118 and data can be transmitted and received optically through link 19, and such infrared transmitter and receiver can be conformed to standardized infrared communications scheme protocol), a second module having a second media access control logic circuit (110, fig. 9) formed thereon for transmitting and receiving data (controller 110 communicate bi-directionally with data processor 112 and processor 114) substantially conforming to a standardized infrared communications scheme protocol utilized by the first module (note that data processor 112 and remote controller 110 are communicating with infrared transmitter 116 and receiver 118, and such infrared

transmitter and receiver can be chosen to be conformed with standardized infrared communications scheme protocol), and a single hardwire electrical conductor signal path (the path or the electrical conductor that connects module 112 to module 110) connecting the first and second modules to facilitate electrical bi-directional communications (col. 11, lines 28-32).”

The Examiner then admits that WELCH differs from the claimed invention stating that WELCH:

“does not specifically disclose the system is a shock resistant system. Rostoker teaches a shock resistant system (col. 4, lines 25-26 and 1, fig. 2) for wireless communication board (9, fig. 2,3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that a data processing system such as the one of Welch can be housed within a housing such as the one of Rostoker to provide safety and protection. As to a shock resistant system, it is inherent that electrical or optical components are housed within a housing for the reason of safety and protection, and it would have been obvious to provide a house to a system in order protect it’s components and to provide safety to users.”


In summary, the Examiner states that within the WELCH transceiver 14, data processor 112 is connected to remote controller 110 by a single hardwired electrical conductor path wherein processor 112 and controller 110 communicate via an infrared communications protocol scheme. Then the Examiner modifies WELCH with ROSTOKER’s housing. The Examiner’s rejection is inappropriate for numerous reasons, see *infra*.

WELCH does not teach or suggest a single hardwired electrical conductor signal path between the first and second modules.

Applicant's independent Claim 1 as amended recites, *inter alia*, a single *hardwired electrical conductor signal path* connecting said first and second modules to facilitate electrical bi-directional communications between said first and second media access control circuit only through said hardwired electrical conductor signal path.

Applicant's independent Claim 6 as amended recites, *inter alia*, communicating electrically between the first and second modules *only through said single hardwired electrical conductor signal path* bi-directionally using the standardized infrared communications scheme protocol.

A review of the prior art indicates that WELCH is silent with regard to whether the link between remote controller 110 and data processor 112 is a single hardwired conductor electrical path. However, Figure 9 clearly indicates that the communication path between remote controller 110 and data processor 112 is a bus, cable or multiwire path because of the manner in which the communication path is illustrated. In particular, communication paths having more than one wire path, such as a multiwire path, are typically depicted with a larger boxed line with arrowheads. And typically, a single communication path is depicted with only one line, such as how the paths to modules 126 ("CLK") and 124 ("P/S") are depicted in Figure 9. Thus, from Figure 9, it is clear that the path between remote controller 110 and data processor 112 is more than a single hardwired electrical conductor signal path.



Hence, WELCH does not teach or suggest, *inter alia*, a single *hardwired electrical conductor signal path* connecting said first and second modules to facilitate electrical bi-directional communications between said first and second media access control circuit only through said hardwired electrical conductor signal path, as currently recited in independent Claim 1.

And furthermore, WELCH does not teach or suggest, *inter alia*, communicating electrically between the first and second modules *only through said single hardwired electrical conductor signal path* bi-directionally using the standardized infrared communications scheme protocol, as currently recited in independent Claim 6.

Accordingly, based on this distinction alone, Applicant submits that no proper combination of the applied prior art can render unpatentable the combination of features recited in at least independent Claims 1 and 6. Therefore, Applicant requests the Examiner to reconsider and withdraw the rejection of independent Claims 1 and 6 under 35 U.S.C. § 103(a) and indicate this claim allowable over the art of record.

Furthermore, Applicant submits that Claims 3-5 and 8-9 are allowable at least for the reason that these claims depend from allowable independent Claims 1 and 6 and because these claims recite additional features that further define the present invention. Therefore, Applicant requests the Examiner reconsider and withdraw the rejection of Claims 3-5 and 8-9 under 35 U.S.C. § 103(a) and indicate these claims allowable over the art of record.

WELCH does not teach or suggest communication between the first and second module via a standardized infrared communications scheme.

Applicant's independent Claim 1 as amended recites, *inter alia*, a first module having a first media access logic circuit *for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol*; a second module *having a second media access logic circuit for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol utilized by said first module*; . . .

Applicant's independent Claim 6 as amended recites, communicating electrically between the first and second modules only through said single hardwired electrical conductor signal path bi-directionally *using the standardized infrared communications scheme protocol*.

On the other hand, WELCH does not teach or suggest the communication between remote controller 110 and data processor 112 being in a standardized infrared communications scheme protocol. Instead WELCH teaches that the "heart of the" transceiver section 104 of the remote station 14 is communication processor 114. The WELCH transceiver section also includes infrared transmitter 116 and infrared receiver 118. Moreover, it is evident that if a communications scheme is implemented, that it is implemented in the communication processor 114 of the

transceiver section 104 which supports the functionality of infrared transmitter 116 and infrared receiver 118. Or to put it another way, it is apparent that the communication between remote controller 110 and data processor 112 is not via a standardized infrared communications scheme.

Accordingly, based on this distinction alone, Applicant submits that no proper combination of the applied prior art can render unpatentable the combination of features recited in at least independent Claims 1 and 6. Therefore, Applicant requests the Examiner to reconsider and withdraw the rejection of independent Claims 1 and 6 under 35 U.S.C. § 103(a) and indicate this claim allowable over the art of record.

Furthermore, Applicant submits that Claims 3-5 and 8-9 are allowable at least for the reason that these claims depend from allowable independent Claims 1 and 6 and because these claims recite additional features that further define the present invention. Therefore, Applicant requests the Examiner reconsider and withdraw the rejection of Claims 3-5 and 8-9 under 35 U.S.C. § 103(a) and indicate these claims allowable over the art of record.

The Examiner's interpretation of "shock-resistant" is inappropriate.

With regard to Claim 1, the claim's preamble recites, *inter alia*, [a] *shock-resistant* system for operatively interconnecting hardware modules within a computer system . . . From the aforementioned rejection, is apparent that the Examiner has a misunderstanding as to the implied definition of "shock".

In general, the Applicant's invention is directed to systems and methods for interconnecting a plurality of hardware modules, namely circuit boards or daughter cards, in an embedded environment that have increased reliability, such that they can withstand shock and vibration, and provide greater electrical isolation between such modules than prior art methods and systems. The term "shock-resistant" is not intended to mean the phenomena of an extreme stimulation of the nerves, muscles, etc. one receives when an electric current is passed through the body. Rather, the term "shock-resistant" is intended to be interpreted generally as the impact, forces, extreme movement, etc. (for instance in combat or during a collision); a sudden powerful concussion (for instance from a large bomb); or a violent blow, shake or jar.

With this clarification in mind, it is clear that the Examiner has modified WELCH in view of ROSTOKER for an entirely unnecessary reason. Needless to say, there is absolutely no proper motivation provided by the Examiner for the aforementioned modification. Thus, Applicant submits that the art of record fails to disclose or suggest the requisite motivation or rationale for combining the documents under 35 U.S.C. § 103(a) in the manner asserted by the Examiner.

Accordingly, based on the aforementioned defect in the rejection, Applicant requests the Examiner to reconsider and withdraw the rejection of independent Claims 1 under 35 U.S.C. § 103(a) and indicate this claim allowable over the art of record.

Furthermore, Applicant submits that Claims 3-5 are allowable at least for the reason that these claims depend from allowable independent Claim 1 and because these claims recite additional features that further define the present invention. Therefore, Applicant requests the Examiner reconsider and withdraw the rejection of Claims 3-5 under 35 U.S.C. § 103(a) and indicate these claims allowable over the art of record.

Re: Dependent Claim 5

WELCH does not teach or suggest each respective one of said multiplicity of modules including at least one dedicated transmitter element and receiver element

The Examiner further contends that WELCH discloses that “the system (102, fig. 9) comprises a multiplicity of modules (112, 110, 114, fig.9), wherein each one of the multiplicity of modules has at least one transmitter (116, fig. 9) and a receiver element (118, fig. 9) formed thereon and each respective one of the multiplicity of modules being electrically interfaced to one another (note that modules 112, 110, and 114 are electrically connected to each other.” The Applicant respectfully disagrees with the Examiner’s position.

Applicant’s dependent Claim 5 as amended recites, *inter alia*, wherein *each respective one of said multiplicity of modules comprises at least one dedicated transmitter element and receiver element*, each respective one of said multiplicity of

modules being electrically interfaced to one another via said transmitter and receiver elements such that said modules are operative to transmit and receive data therebetween.

A review of WELCH indicates that WELCH absolutely does not teach or suggest a dedicated transmitter and receiver for each module that communicates to other modules via a standardized infrared communications scheme. From Figure 9, it is evident that WELCH only teaches one transmitter ("IR TX") 116 and one receiver ("IR RX") 118 which is only dedicated to communication processor 114. It is also evident that data processor 112, remote controller 110, and communication processor 114 do not have incorporated within each individual module a transmitter and receiver which communicate through a single hardwired connection via a standardized infrared communications scheme.

Accordingly, Applicant submits that no proper combination of the applied prior art can render unpatentable the combination of features recited in at least dependent Claim 5. Therefore, Applicant requests the Examiner to reconsider and withdraw the rejection of dependent Claim 5 under 35 U.S.C. § 103(a) and indicate this claim allowable over the art of record.

Welch in view of Rostoker and in further view of Matsubara

Applicant respectfully traverses the rejection of Claims 2 and 7 under 35 U.S.C. § 103(a) as being unpatentable over WELCH in view of ROSTOKER and in further view of U.S. Patent No. 6,335,812 to Matsubara et al. [hereinafter "MATSUBARA"].

The Examiner admits that the modified communication system of WELCH and ROSTOKER differ from the claimed invention in that WELCH and ROSTOKER do not disclose a standardized infrared communications scheme protocol developed by the Infrared Data Association. The Examiner then submits that MATSUBARA discloses a plurality of optical communications modules (110, 111, fig. 2) that communicate based on infrared scheme protocol developed by the Infrared Data Association. The Examiner then submits that it would have been obvious to a person of ordinary skill in the art at the time the invention to incorporate an optical

transmitter and an optical receiver that uses a standard protocol defined by IrDA such as one of MATSUBARA for the optical transmitter and receiver in the modified communication system of WELCH and ROSTOKER in order to provide a point-to-point transmission that support a broad range of application, computations, and communications.

MATSUBARA discloses a communications system, in which by relaying information of an IrDA terminal which has a one-to-one communication function, a communication control apparatus (a relay terminal) reduces traffic on an IrDA terminal and executes multicast transmission between a plurality of terminals including the IrDA terminal. In this network system, as for the IrDA terminal which has only a one-to-one communication function, communication with a plurality of LAN terminals is made possible by the relay terminal as shown in Figure 1. It is further noted that in the relay terminal (see Figure 2), the communication control section 102 includes a first receiving section 110, a first sending section 111, an infrared ray sending section 112, and infrared ray receiving section 113, and information sending section 114, and a received information sending section 115.

As previously discussed, *supra*, the combination of which the Examiner presents as a rejection does not result in the invention as presently recited in Claim 2 or Claim 7. The Applicant's invention has a dedicated transceiver for each hardware module *for transmitting data substantially conforming to a standardized infrared communications scheme protocol* (44, 50 for the embodiment of Figure 3 or 64, 68, 74, and 78 for the embodiment of Figure 4). The Applicant's invention further has a dedicated receiver for each module *for receiving data substantially conforming to a standardized infrared communications scheme protocol* (46, 48 for the embodiment of Figure 3 or 66, 70, 72, 76). Instead, the Examiner has inappropriately concluded that the WELCH data processor 112 and the WELCH remote controller 110 each have dedicated transceivers and receivers that communicate via a standardized infrared communications scheme.

Because neither WELCH, ROSTOKER, or MATSUBARA disclose or suggest as recited in independent Claim 1, *inter alia*, a first module having a first media access logic circuit for *transmitting and receiving data substantially*

conforming to a standardized infrared communications scheme protocol; a second module having a second media access logic circuit for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol utilized by said first module; . . . Applicant submits that no proper combination of these documents can render unpatentable the combination of features recited in at least independent Claim 1.

Moreover, because neither WELCH, ROSTOKER, or MATSUBARA disclose or suggest as recited in independent Claim 6, *inter alia*, providing a first module . . . for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol; providing a second module . . . for transmitting and receiving data substantially conforming to a standardized infrared communications scheme protocol; . . . Applicant submits that no proper combination of these documents can render unpatentable the combination of features recited in at least independent Claim 6.

Furthermore, Applicant submits that Claims 2 and 7 are allowable at least for the reason that these claims depend from allowable independent Claims 1 and 6 and because Claim 2 and 7 recite additional features that further define the present invention. In particular, Applicant submits that no proper combination of WELCH, ROSTOKER and MATSUBARA discloses or suggests in combination with the features of Claims 2 and 7, *inter alia*, wherein said infrared communications scheme protocol comprises a protocol developed by the Infrared Data Association.

Therefore Applicant requests the Examiner reconsider and withdraw the rejection of Claims 2 and 7 over WELCH, ROSTOKER and MATSUBARA under 35 U.S.C. § 103(a) and indicate these claims allowable over the art of record.

CONCLUSION

Applicant respectfully submits that each and every pending claim of the present invention meets the requirements for patentability, and respectfully request the Examiner to indicate allowance of each and every claim of the present invention.

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicant's invention, as recited in Claims 1-9 and in newly submitted Claims 10-11. The applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Further, any amendments to the claims which have been made in this response and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

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